

ABSTRACTS OF CARDIOLOGY

The Clinical Aspects of Complete Auriculoventricular Heart Block: A Clinical Analysis of 71 Cases. L. W. IDE. *Ann. intern. Med.*, 32, 510-523, March, 1950.

Patients of any age may have complete heart block (8 intrauterine cases have been reported), but the incidence is much greater in later life. A ratio of 2 or 3 males to 1 female may be related to the frequent association with coronary sclerosis which is found in 50 to 75% of all cases. In the present series of 71 cases 8 were related to acute myocardial infarction, in 12 a digitalis substance was responsible (the block disappearing within an average of 5 days after discontinuing the drug), 9 were congenital in origin, 4 were related to rheumatic fever, 2 to scarlet fever, and 1 to syphilis. Diphtheria, hyperthyroidism, neoplasm affecting the conducting system, uræmia, pneumonia, peritonitis, and trauma have all been mentioned as ætiological factors.

Symptoms, when present, vary from transient episodes of mild giddiness to frequent attacks of syncope and convulsion. Stokes-Adams attacks of loss of consciousness are due to ventricular standstill, ventricular tachycardia, ventricular fibrillation, or to a combination of these. Only 25 patients of this series had any symptoms due to the heart block. The average ventricular rate was 45. Rapid rates may be due to myocardial infarction or congestive failure. Prognosis depends upon the severity of the symptoms and upon the associated heart disease. Patients with congenital defect live longer.

It is necessary to treat complete heart block only when there are associated symptoms or when it is the result of drug intoxication. In some instances it can be ignored and therapy directed at other manifestations of heart disease. "Paredrine," ephedrine, adrenaline, and quinidine have been used in the treatment and prevention of Stokes-Adams seizures.

[The article includes an excellent historical review of the subject.]

T. Semple

An Attempt at Treatment of Cardiac Decompensation by Ligation of the Inferior Vena Cava. F. D'ALLAINES, H. DE BALSAC, C. DUBOST, —. SCEBAT, —. FRILEUX, and —. ALLARY. *Mém. Acad. Chir.*, Paris, 75, 791-799, Nov. 30, 1949. 3 figs., 13 refs.

Functional inadequacy of the left side of the heart leads to pulmonary hypertension, which is followed in turn by right-sided heart failure with liver enlargement, failure of excretion of salt and water, and increasing dropsy. The authors have attempted to alleviate this condition by ligation of the inferior vena cava just below the renal veins, it being hoped in this way to reduce

right auricular pressure (observations made in 2 cases showed a fall from 29 to 14 cm. of water in the first and from 35 to 19 cm. of water in the second), and to facilitate venous return from the kidney and liver with a resulting improvement in the output of salt and water. The ligature is intended to protect the right heart from the great volume of blood by which it may be almost swamped when there is a rapid change in position or when the patient is recumbent. Operation is only undertaken when there has been an unsatisfactory response to prolonged medical treatment, and where resumption of even the mildest activity leads to an immediate relapse. Sixteen patients have been subjected to operation so far, 14 with mitral disease and 2 with hypertension. There was one post-operative death. The vessel is approached by the extraperitoneal route through a pararectal incision under local analgesia (paravertebral and splanchnic block). Phlebitis, despite energetic prophylactic treatment with heparin, is the bugbear of the convalescent period. The immediate result is very pleasing, with quite dramatic relief of orthopnea and the distressing paroxysms of nocturnal dyspnea. None of the patients has so far been followed for more than 6 months and it is too early to say what the late results will be.

M. R. Ewing

Technique of Transthoracic Block of the Cardioaortic Plexus in Angina Pectoris. J. J. DZHANELIDZE. *Khirurgiya*, No. 1, 10-14, Jan., 1950.

After infiltration of a wide area over the manubrium sterni a transverse incision is made down to periosteum. In the centre of the manubrium the compact and superficial layers of cancellous bone are chiselled away, then with a drill 1½ cm. in diameter a hole perforating the manubrium is made. Through its centre a fine needle is pushed and, when it reaches the aorta, warm 1% solution of procaine is slowly injected. The author claims disappearance of anginal attacks in 16 out of 27 patients treated in this way.

Z. W. Skomoroch

Transfusion Treatment of Shock due to Myocardial Infarction. F. H. EPSTEIN and A. S. RELMAN. *New Engl. J. Med.*, 241, 889-893, Dec. 8, 1949.

Clinical observations are reported on 50 patients in "shock" following coronary occlusion; 20 of these received a transfusion. The criteria of shock are a systolic blood pressure remaining below 90 mm. Hg. for at least one hour associated with weakness or stupor, cyanosis, and coldness and dampness of the skin. For transfusion, an average of 700 ml. blood or plasma was usually given at the rate of 250 ml. an hour, starting 3 to 4 hours after the appearance of shock. The

authors conclude that, although transfusion seemed to be of benefit in a few cases, there was no significant difference between the two groups as regards mortality and recovery from shock. Transfusion did not seem to increase the incidence of pulmonary oedema or the severity of congestive failure.

R. T. Grant

Propylthiouracil in the Treatment of Angina Pectoris: A Comparison with Thiouracil Therapy. S. BEN-ASHER. *Ann. intern. Med.*, 32, 528-541, March, 1950.

Propylthiouracil is not as effective as thiouracil in the treatment of angina pectoris. The effect of the former drug on the basal metabolic rate and blood cholesterol level is considerably less than that of thiouracil, but toxic effects occur less frequently.

T. Semple

Tetraethylammonium Chloride in the Treatment of Angina Pectoris. W. J. ATKINSON. *Amer. Heart J.*, 39, 336-352, March, 1950.

Intravenous injections of tetraethylammonium chloride (TEAC) were given to 28 patients with angina of effort at intervals which varied from twice a week to once a fortnight over a period ranging from 1 to 20 months. A sufficient dose was given to cause pronounced tingling in the feet, the optimum quantity being determined separately in each case. All the patients had been treated for some months with phenobarbitone, nitroglycerin, or digitalis, and their cardiac condition had become stabilized. In 25 cases there was an improvement, as judged by the frequency of attacks or the amount of exercise needed to precipitate an attack, during treatment with TEAC.

D. Verel

Cholesterol Content of the Coronary Arteries and Blood in Acute Coronary Artery Thrombosis. L. M. MORRISON, and K. D. JOHNSON. *Amer. Heart J.*, 39, 31-34, Jan., 1950.

The authors suggest that a disturbance in lipid metabolism is a factor in the pathogenesis of atherosclerosis. This suggestion is based on the following findings. (1) The average cholesterol content of the coronary arteries in a group of patients who died from an acute coronary artery thrombosis was four times as great as the average cholesterol content of the coronary arteries in a comparable control group. (2) Hypercholesterolaemia was found in most of the patients who died of coronary thrombosis, as compared with the average blood cholesterol level in the control group.

R. T. Grant

Vitamin E in Intermittent Claudication. A. H. RATCLIFFE. *Lancet*, 2, 1128-1130, Dec. 17, 1949.

In the neurovascular clinic at Manchester Royal Infirmary vitamin E was employed in the treatment of 41 patients suffering from intermittent claudication associated with obliterative vascular disease of the legs. The treatment was applied to cases conforming to certain data obtained from walking tests. Each patient carried out the exercise of walking either along the hospital

corridors or on a platform with a moving conveyor belt. At the moment when pain was first experienced a note was made of the distance traversed by the patient. A second measurement of the distance was made when the patient stopped walking. The cases selected for treatment were those in which the halting distance did not exceed 500 yards (450 m.), and the pain, though persistent, was not of increased intensity after the onset of claudication. None of these patients had received any other form of treatment, nor were they regarded as suitable for sympathectomy.

Vitamin E was prescribed in the form of "ephynal," a synthetic preparation of α -tocopherol. The dose was 400 mg. daily by mouth. Walking tests were repeated after 3 months' therapy. Improvement was considered to have taken place when the patients were able to walk 880 yards in comparative comfort and without experiencing pain. The tests revealed that 34 patients had improved, although beneficial effects were not observed until the treatment had been given for periods ranging from 4 to 8 weeks. On the other hand, only 5 of 25 controls showed a similar degree of improvement.

Reference to mathematical tables for experimental data involving small numbers showed that these figures can be assessed as "highly significant." Thus vitamin E is indicated in the treatment of claudication, but it is effective only when administered daily in large doses and for at least 3 months.

A. Garland

The Cardiovascular System in Toxæmias of Pregnancy.

A. B. BENCHIMOL and R. D. CARNEIRO. *Arch. brasil. Cardiol.*, 2, 397-416, Dec., 1949.

The authors think that, whereas the hypertension accompanying pregnancy toxæmia has been extensively studied, the myocardial changes have not. The authors maintain that 50% of hypertensive women who become pregnant develop toxæmia whereas the condition only arises in 2% of normal subjects. They also consider that the duration of the toxæmia is more important than its degree in bringing about permanent hypertension.

Cardiac asthma and acute pulmonary oedema occur in pregnancy toxæmia; the heart may become acutely dilated and later return to its normal size. They quote Dexter and White who believe that heart failure is due primarily to the "load" of the hypertension; the modern view, however, seems to be that there is primary myocardial damage as shown by post-mortem and electrocardiographic changes which vary considerably.

Paul B. Woolley

The Effect of Lumbo-Dorsal Sympathectomy and Splanchnic Resection in Hypertension. A Preliminary Report on 18 Carefully Selected Cases Followed for 3-13 Years After Operation. A. C. ABBOTT. *Manitoba med. Rev.*, 29, 567-571, Nov., 1949.

The author reviews very conservatively the results of operation in 18 cases of arterial hypertension—5 treated by the technique of subdiaphragmatic splanchnic resection and sympathectomy described by Adson and Craig, and the remainder by the combined supra- and infra-diaphragmatic procedure of Smithwick. The

patients are separated into three age-groups: (1) 18 to 30 years (5 patients followed up 6 to 13 years); (2) 31 to 40 years (7 patients followed up 3 to 9 years), and (3) 41 to 60 years (6 patients followed up 4 to 8 years) and the blood-pressure response and symptomatic improvement in each group tabulated. Each case is briefly described. Three patients have died, 6 months, 7 years, and 7 years respectively after operation. In the remainder, the symptomatic results (which correspond usually, but not always, with the results as judged by fall in blood pressure) are given as follows: group (1) good in 2 cases, fair in 3; group (2) good in 3 cases, fair in 2 (2 deaths); group (3) good in 3 cases, fair in 2 (1 death). The author concludes that operation offers relief which no other treatment can provide at present.

D. W. C. Northfield

The Effect of a War-imposed Protein Free Diet on the Blood Pressure Level in Essential Hypertension.

J. KOHÁRI-KUCHÁRIK. *Amer. J. med. Sci.*, 219, 27-29, Jan., 1950.

Almost complete protein-starvation during the 10 months following the siege of Budapest in 1945 was found to have had no effect on the blood pressure of 39 patients with essential hypertension observed by the author throughout this period.

G. Schoenewald

Renal Venous Pressure in Chronic Congestive Heart Failure.

M. H. MAXWELL, E. S. BREED, and I. L. SCHWARTZ. *J. clin. Invest.*, 29, 342-348, March, 1950.

The pressure in the renal vein, measured by catheterization, under fluoroscopic control, from the antecubital vein in 10 cases of congestive heart failure was approximately double that in 17 normal controls. Calculation of the renal vascular resistance suggests that renal vasomotor changes are largely responsible for the decrease in renal plasma flow and filtration rate in heart failure.

D. Verel

Myxoma of the Left Auricle. P. M. McALLEN. *Brit. med. J.*, 1, 932-934, April 22, 1950.

Arteriography in Raynaud's Disease. M. SERVELLE. *Arch. Mal. Cœur*, 42, 532-538, May, 1949.

The study of the arteries of the hands by means of arteriography was found useful in 50 cases of Raynaud's disease. In the patients studied some arteriograms were obtained during an induced attack of arterial spasm in the hands. The lateral digital arteries were the only vessels to show radiological abnormalities; those of the thumbs always appeared normal. In 26% of the cases all the digital arteries were patent but some of them appeared thinner than normal. In 62% arterial occlusion was evident in one or more fingers; most commonly the thrombotic occlusion was found to be at the level of the second phalanx. Below the site of occlusion the arteriogram sometimes revealed the presence of a collateral circulation formed by very tiny filiform vessels. In others, the non-thrombosed vessels were of an unusually thin calibre, this being interpreted as being due to arterial

spasm. Clinically, the patients with radiological evidence of thrombosis had typical scarring of tips of fingers from dry symmetrical gangrene in the terminal phalanges.

A. I. Suchett-Kaye

Thiocyanate Therapy. W. F. CONNELL, G. K. WHARTON, and C. E. ROBINSON. *Canad. med. Ass. J.*, 62, 20-27, Jan., 1950. 4 figs., 14 refs.

In the past 20 years over 60 papers have been published on thiocyanate therapy of hypertension, and before 1936, when Barker reported the simple method of estimating sodium thiocyanate in serum, 9 cases of fatal poisoning were reported. It is suggested that the optimum dosage and the selection of suitable patients have not been adequately discussed. In the present study there were 140 persons (50 out-patients from a hypertension clinic, 30 in-patients, 10 healthy interns, and 50 undergraduate medical students).

The drug is indicated in cases of severe headache, and it is a "sovereign remedy" for this symptom. It is not primarily useful for reducing the blood pressure [other authors disagree]. Patients in group I of the Keith and Wagener classification are suitable for the treatment, and those in group II may, if the blood pressure falls, have some measure of protection from premature cardiovascular senescence.

The drug is contraindicated in groups III and IV, and in malignant hypertension because renal failure may cause drug accumulation. It should not be given to patients over 60 years old because hypertension at this age is essentially benign and any therapy is meddlesome, or to patients with drug intolerance or cardiac and cerebral vascular complications. It is also contraindicated where adequate control of the serum level is impossible.

John Anderson

Ventricular Septal Defect with Aortic Incompetence. (Differential Diagnosis from Patent Ductus Arteriosus.)

P. SOULIE, D. ROUTIER, and P. BERNAL. *Arch. Mal. Cœur*, 42, 765-780, Aug., 1949.

Ventricular septal defect may be complicated by aortic regurgitation when the aortic valve becomes implicated in the fibrosis around the septal defect. Two such cases are described. Both were incorrectly diagnosed as cases of patent ductus arteriosus and in both the patient was needlessly submitted to operation. They are reported to call attention to this possible cause of diagnostic error. The diagnostic features leading to the error were: (1) a to and fro murmur over the second and third ribs to the left of the sternum; (2) an increased pulse pressure; (3) electrocardiographic evidence of left and right ventricular hypertrophy; (4) the appearance of the heart and great vessels on radioscopy and in angiocardigrams; (5) the greater oxygen content of blood from the pulmonary artery than of blood from the right ventricle.

The difficult differential diagnosis between this condition and patent ductus arteriosus is fully discussed. The most important distinguishing point is that the double murmur does not sound like the continuous murmur with systolic accentuation which is typical of patent ductus arteriosus.

H. E. Holling

Anomalous Arterioventricular Excitation Produced by Catheterization of the Normal Human Heart. C. E. KOSSMANN, A. R. BERGER, S. A. BRILLER, B. RADER, and J. BRUMLIK. *Circulation*, 1, 902-909, April, 1950.

Electrocardiographic abnormalities resembling those of the Wolff-Parkinson-White syndrome were produced as an intracardiac electrode was slowly withdrawn through the right ventricle during a continuous electrocardiographic recording. This anomalous auriculo-ventricular excitation might, it is suggested, be caused by contact of the catheter with the endocardial surface of the right ventricle, resulting in increased irritability of a ventricular centre (most probably in the septum) which then discharged prematurely following the slight rise in intra-ventricular pressure due to auricular contraction. A similar physiological mechanism might be the basis of the naturally-occurring Wolff-Parkinson-White electrocardiographic phenomenon. *A. I. Suchett-Kaye*

Electrocardiographic Observations During Cardiac Catheterization. I. R. GOLDMAN, S. G. BLOUNT, A. L. FRIEDLICH, and R. J. BING. *Bull. Johns Hopk. Hosp.*, 86, 141-168, March, 1950.

Continuous electrocardiographic records (standard limb leads) were made on 50 patients during cardiac catheterization. Only one patient did not develop any change in rhythm. Thirty patients developed auricular premature systoles, usually when the catheter tip appeared to be in contact with the auricular septum, and particularly when the catheter was passing through an auricular septal defect. Thirty-nine patients developed nodal premature systoles. Auricular tachycardia occurred in 28 patients, all of whom had congenital heart disease; it was always of short duration and did not interfere with the progress of catheterization. Nodal tachycardia occurred in 36 patients, all of whom had congenital heart disease; it also was of short duration and occurred with the catheter in the right auricle or right ventricle. Auricular flutter developed in 3 patients, but auricular fibrillation was not recorded. Ventricular premature systoles occurred in 44 patients and were often the first indication that the catheter tip had entered the right ventricular cavity. Stiffness of the catheter was found to be a factor increasing the frequency of ventricular premature systoles. Ventricular tachycardia, defined as "an uninterrupted series of three or more ventricular premature systoles," was observed in 39 patients. Except for one case in which it occurred as the catheter tip passed through the superior vena cava and right auricle, it was only seen when the catheter tip was in the right ventricle. It usually ceased with a change in the position of the catheter tip, but in 3 cases it progressed to ventricular flutter, and in one case to ventricular fibrillation before the catheter could be withdrawn. In all the cases of ventricular flutter the patient recovered, but the ventricular fibrillation (in a 10-year-old boy with rhabdomyoma of the myocardium) proved fatal. Various degrees of A-V block occurred in 16 patients, and transient right bundle-branch block in 24.

[The high incidence of arrhythmia and the almost universal response to withdrawal of the catheter

emphasize the advantages of continuous electrocardiographic records during cardiac catheterization. The value of this report is enhanced by the reproduction of the recordings obtained in the terminal stages of the fatal case of ventricular fibrillation.]

William A. R. Thomson

Catheterization of the Left Side of the Heart in Man. H. A. ZIMMERMAN, R. W. SCOTT, and N. O. BECKER. *Circulation*, 1, 357-359, March, 1950.

Catheterization of the left side of the heart presents obvious problems. The catheter must move against arterial blood pressure, and arterial spasm may be sufficiently great to prevent forward passage of the catheter. When the aortic valve has been reached the catheter must be passed through the orifice of the valve into the left ventricle in the short ejection phase (0.22 seconds) during which the aortic valve is open.

The authors chose the ulnar artery for introduction of the catheter because of its size, ready accessibility, and the fact that it could, if necessary, be ligated with impunity. Local infiltration with 1% procaine was employed. Failure to pass the catheter beyond the junction of the subclavian artery with the aortic arch occurred in one-fifth of the author's cases of aortic incompetence, but once past that point the catheter failed to pass into the ventricle in 3 cases only. In one case of aortic incompetence, catheterization caused ventricular fibrillation, which was accompanied by substernal pain, and the patient died within a quarter of an hour. At necropsy the ostium of the left coronary artery was found to be anomalous in that it was situated 3 mm. above the normal site, and it was assumed that the catheter had entered its orifice. Histological section of the heart muscle of this case revealed active rheumatic inflammation[!]. Another patient died of congestive heart failure 4 days after catheterization, but careful search at necropsy revealed no indication of trauma. *S. Oram*

Commissurotomy for Mitral Stenosis. R. P. GLOVER, T. J. E. O'NEILL, and C. P. BAILEY. *Circulation*, 1, 329-342, March, 1950.

Earlier attempts to divide or dilate the mitral orifice were not happy in their results, but recent technical developments and modern investigation methods make the outlook much more hopeful and, in a series of 30 cases surgically treated by the authors, although 6 deaths occurred, the results to date in the survivors would appear most gratifying.

In advanced mitral disease the vegetations develop into a fibrous and thickened scar which lies along the free edge of the valve, the base remaining flexible. The surgical treatment advocated by the authors is to divide the "commissures" of the valve with a special knife attached to the right index finger, which is introduced through the left auricular appendix, blood loss being controlled by a purse-string suture tightened round the finger. Direct palpation and digital dilatation of the valve area are also possible by this method, which has certain advantages

over other methods of approach. There are obvious dangers and complications likely to arise in an intra-cardiac operation on an already damaged heart, and numerous technical details have to be studied in order to avoid trouble.

T. Holmes Sellors

Heart Disease Complicated by Pregnancy. D. C. HAIG and A. R. GILCHRIST. *Edinb. med. J.*, 56, 55-74, Aug., 1949.

An analysis is presented of material obtained for the 20-year period 1928-47, and from the follow-up examination of all patients attending the clinic during the 10-year period 1937-46. Cardiac disease was diagnosed in 1,100 cases out of a total of 80,422 pregnancies, an incidence of 1.3%. Rheumatic heart disease was found in 94%, various congenital flaws in 3.6%, hypertensive heart disease in 1.8%, and miscellaneous cardiac abnormalities in the remaining 0.6%. The mortality among patients with heart disease fell from 6.3% in 1928 to 0.9% in 1947, and it is significant that, although the over-all maternal mortality during this period had fallen from 1.1% to 0.2%, deaths from heart disease had not been reduced to the same extent, indicating that cardiac disease is now a more prominent cause of maternal mortality than formerly. There was a three-fold improvement in mortality among those patients who received adequate cardiological supervision during pregnancy, compared with those who received little attention or came under supervision only late in pregnancy.

The diagnosis of heart disease is not always easy. On follow-up examination it was found that 10% of patients who had been suspect during pregnancy had no organic heart disease. Generally the prognosis is better in the younger group of patients; over the age of 30 serious incapacity is more probable. It is for this reason that women with cardiac disease are recommended to have their babies in the early twenties.

The main purpose of antenatal supervision is to facilitate the adoption of measures to prevent the development of congestive heart failure, firstly by providing the cardiologist and obstetrician with the opportunity to see and grade all cases within the first 4 months of pregnancy, secondly by the full use of in-patient treatment in hospital and, lastly, by continued attention to the general health of the patient. The most difficult cases are those who are found to be in grade III about mid-term. Strict measures and absolute confinement to bed must be enforced for the remainder of the pregnancy in the hope that natural vaginal delivery may be safely accomplished. The method of delivery is discussed. Caesarean section is considered to be undesirable in cardiac cases where there is no obstetrical reason for interference. Statistics are presented which indicate that the maternal mortality following Caesarean section is double that after vaginal delivery. On the basis of the follow-up examination it appears that pregnancy may induce congestive heart failure in a woman roughly 5 to 7 years before it is due to appear in the normal course of events. The fate of patients surviving pregnancy is studied and all the evidence indicates that pregnancy does not alter the course of rheumatic heart disease. A patient with heart disease,

having overcome the dangers of pregnancy, may survive for many years and ultimately die no younger than had she never borne a child.

T. N. MacGregor

Acute Non-specific Benign Pericarditis. E. EVANS. *J. Amer. med. Ass.*, 143, 954-957, July 15, 1950.

The author records 11 cases of acute non-specific pericarditis of obscure aetiology. Pain was the outstanding symptom in all cases and sometimes simulated that of coronary thrombosis. The pain may be differentiated because, although it may radiate widely, even to the arms, it is aggravated by movement, respiration, and sometimes by swallowing. Fever, of variable degree, was present in all the cases. Five patients had a history of recent respiratory infection. Radiologically, 4 showed cardiac enlargement (? pericardial effusion). Electrocardiographic changes were those characteristic of pericarditis. Five of the patients had more than one attack.

The author expresses the view that this condition has no relation to constrictive pericarditis, but points out that time alone will show whether this opinion is correct. He reviews some of the papers on constrictive pericarditis and points out that its aetiology is usually obscure. In an addendum, 4 further cases are described.

M. H. Pappworth

Arteriosclerotic Aortic Insufficiency. N. M. FENICHEL. *Amer. Heart J.*, 40, 117-124, July, 1950.

Aortic insufficiency was noted in 17 patients, whose ages ranged from 59 to 75 and who had been known to have hypertension for from 4 to 25 years. In the only case examined post mortem (in a man aged 71) the aortic valves were fibrosed and calcified and the aorta was markedly sclerotic. In 13 of the cases the aortic insufficiency developed while the patient was under observation, but its advent appeared to have little influence on the prognosis.

C. Bruce Perry

Clinical Features and Pathogenesis of Spontaneous Rupture of the Aorta. N. L. VIL'K. *Terap. Arkh.*, 22, No. 2, 14-24, March-April, 1950.

The author discusses the clinical features and pathogenesis in 18 cases of spontaneous rupture of the aorta. Six case histories are given. The term spontaneous rupture is used for cases in which there is no trauma or neoplasm. In none of the cases was the condition diagnosed during life. There were 15 men and 3 women; most were over 40 years of age; 4 were under 40 and one patient was 15 years old. In 11 cases hypertension was present. In 11 cases the aorta ruptured in its ascending part, and in 5 cases there were multiple ruptures. In most cases the rupture led to the formation of a dissecting aneurysm. A severe migrating pain was the presenting symptom in 15 cases; other symptoms and signs included vomiting, dizziness, shock, and neurological signs (a rapidly developing paralysis of the lower limbs due to ischaemia).

A diastolic murmur was often heard in the aortic area, indicating an enlarging aorta and incompetence of the valves. Tachycardia and pulsus paradoxus developed

in some cases. The electrocardiogram did not show anything abnormal. The radiological picture was that of a progressively enlarging aorta with a double contour. The immediate cause of death was heart tamponade in 7 cases. Seven patients lived for about 24 hours after the beginning of symptoms, the others lived longer (up to 35 days in one case in which laparotomy was twice performed because the diagnosis of a perforated ulcer was made). The differential diagnosis is from myocardial infarction and ulcer perforation. In the pathogenesis, hypertension and atherosclerosis are of importance. Congenital lesions, such as a stenosis of the aortic isthmus, may predispose to spontaneous rupture.

N. Chatelain

The Myocardium in Subacute Bacterial Endocarditis.

O. SAPHIR, L. N. KATZ, and I. GORE. *Circulation*, 1, 1155-1167, May, 1950.

The records of 76 cases of fatal subacute bacterial endocarditis from the files of the U.S. Armed Forces Institute of Pathology were studied, the purpose of the investigation being to attempt to correlate pathological changes found at necropsy with electrocardiographic changes found in life, with particular reference to the incidence of myocarditis. In all cases histological examination of the heart showed myocarditis, perivascular infiltration and fibrosis, Aschoff bodies, infarcts, and intravascular thrombi to be present in various combinations. Electrocardiographic changes that could be attributed to the myocardial damage shown at necropsy are described. It is urged that clinical evidence of myocardial change should be sought for more carefully in all cases of subacute bacterial endocarditis.

H. E. Holling

Treatment of Congestive Heart Failure in Ambulatory Patients with Salyrgan-Theophylline Administered Orally.

J. ABRAMSON, E. BRESNICK, and P. L. SAPIENZA. *New Engl. J. Med.*, 243, 44-47, July 13, 1950.

A clinical trial was carried out, on 30 ambulant patients with congestive cardiac failure, of a mercurial diuretic in tablet form called "salyrgan-theophylline oral" (STO) each tablet containing 0.08 g. "salyrgan" (mersalyl) and 0.04 g. theophylline. All the patients had been receiving mercurial injections before treatment with STO, and all received digitalis, ammonium chloride, and a low-salt diet without fluid restriction during the trial. It was found necessary to administer the diuretic on successive rather than alternate days, treatment being started with a dose of one tablet thrice daily after meals for 3 successive days each week. Occasionally great diuresis was obtained by giving the three tablets together after breakfast. The optimum dosage was found to vary greatly from patient to patient, the largest individual dose given being 8 tablets, and the largest weekly dosage 5 tablets thrice daily for 6 days. STO completely replaced injections in 17 patients and was partly successful in 9 others. Toxicity was manifested in gingivitis and various gastrointestinal symptoms, but only one patient could not tolerate repeated trials of the drug, owing to excessive diarrhoea.

T. Semple

Further Studies on Mechanism of Auricular Fibrillation.

D. SCHERF, L. J. MORGENBESSER, E. J. NIGHTINGALE, and K. T. SCHAEFFELER. *Proc. Soc. exp. Biol. N.Y.*, 73, 650-654, April, 1950.

This paper deals with the experimental production of auricular fibrillation and the elucidation of its mechanism. Scherf and his collaborators have already shown that auricular flutter and auricular fibrillation can be produced in dogs by the topical application of aconitine to the animal's auricle. These arrhythmias can be immediately stopped when the area of application is isolated from the rest of the auricles or cooled. These experiments (published previously) were undertaken to disprove Lewis's theory of the circus movement as the responsible mechanism of auricular fibrillation.

In the present experiments tracings were obtained from dog hearts in which auricular fibrillation was induced either by stimulation with rhythmic electrical shocks or by the application of a concentrated solution of acetylcholine to the area of the sinus node. This experimentally produced auricular fibrillation could not be stopped by cooling of the site of application of the drug. In nearly all the experiments, however, the simultaneous cooling of the sinus and A-V nodes terminated the auricular fibrillation. Furthermore, interruption of the cooling caused the auricular fibrillation to recur. It is of interest that in one instance auricular flutter appeared at the end of fibrillation and also after the cooling thermode was withdrawn before the reappearance of auricular fibrillation. The results obtained in these experiments are considered to be incompatible with a circus movement mechanism. An alternative theory of rapid stimulus formation in a centre or centres is favoured. Thus, in some forms of auricular fibrillation more than one centre of rapid stimulus formation could be active and it is also possible that rapid stimulus formation in the A-V node might be responsible for auricular fibrillation.

A. I. Suchett-Kaye

Blood Quinidine Concentrations as a Guide in the Treatment of Cardiac Arrhythmias.

M. SOKOLOW and A. L. EDGAR. *Circulation*, 1, Part I, 576-592, April, 1950.

Quinidine levels were determined in blood and urine by photofluorometry in 72 patients receiving this drug. Thirty of the patients had auricular flutter or fibrillation and the remainder were given the drug for the prevention of paroxysmal arrhythmias, for example, after myocardial infarction. Normal rhythm was restored 28 times in 24 patients with auricular flutter or fibrillation. In 75% of these instances conversion took place with levels of quinidine between 4 and 9 mg. per litre of blood. To produce this effect it was usually necessary to give 0.4 to 0.6 g. of quinidine every 2 hours for 5 doses. In 5 cases conversion occurred with levels below 4 mg. per litre. Levels of 7 mg. per litre were obtained in all the cases of failure, and in 4 of these a blood concentration of 10 mg. per litre was exceeded. After a given dose of quinidine the maximum level in the blood is reached in about 2 hours and significant levels may persist for 12 to 24 hours. When the drug is given every 2 hours the rise in level in the blood after successive doses becomes pro-

gressively less, and if administration is continued the level reaches a plateau for about a week and then falls. To prevent paroxysmal ventricular tachycardia it appeared necessary to maintain a level of 4 mg. per litre of blood.

C. Bruce Perry

Experiences with Cardiac Arrest. F. H. LAHEY and E. R. RUZICKA. *Surg. Gynec. Obstet.*, 90, 108-118, Jan., 1950.

Cardiac arrest in the operating theatre of the Lahey Clinic has occurred 13 times in the past 7 years. Cardiac arrest may occur in any type of operation and with any anæsthetic agent or combination of agents. In this series the condition occurred during the following operative procedures: 3 chest operations; 4 abdominal operations; 6 other operations. The time during which treatment must be applied if it is to be effective is given as 3½ minutes, and any delay beyond this results in permanent changes in psychic behaviour. Interruption of the cardiac action for over 8 minutes is incompatible with life for more than a few hours.

The plan of action suggested is as follows: (1) artificial respiration, with 100% oxygen; (2) immediate cardiac massage by the surgeon; (3) injection of procaine and adrenaline (epinephrine); (4) general treatment, including intravenous administration of fluids and adoption of a 5 to 10 degree Trendelenburg position. Procaine and adrenaline, if immediately available, are injected by cardiac puncture, but no time should be wasted in waiting for sterile syringes and solutions. The airway must of course be unobstructed, and an endotracheal tube inserted if not already in use.

In all of the 13 cases reported cardiac action was restored, but in only 5 cases has there been recovery with normal mentality. The most common complication of cardiac massage is ventricular fibrillation. This may be treated by injection of 5 ml. of 2% procaine into the cavity of the right heart and continuation of the massage.

F. d'Abreu

Tussive Syncope. Observations on the Disease Formerly Called Laryngeal Epilepsy, with Report of Two Cases. W. S. McCANN, R. A. BRUCE, F. W. LOVEJOY, P. N. G. YU, R. PEARSON, E. B. EMERSON, G. ENGEL, and J. J. KELLY. *Arch. intern. Med.*, 84, 845-856, Dec., 1949.

Tussive syncope is a term now suggested as preferable to Charcot's "laryngeal vertigo." Paroxysms of coughing or even forced expiration against an impediment may cause congestion of the cerebral veins, decrease in cardiac output, abnormally high pressure in the right ventricle, and anoxæmia. Such a course of events may bring about syncope and convulsions. In addition, there may be, during bouts of coughing, spasm of the pulmonary artery, which will naturally worsen the clinical manifestations. This spasm may be associated with nicotine poisoning in certain cases.

The supporting evidence for these contentions is to be found in a full account of 2 patients, one of whom showed this full clinical syndrome of tussive syncope and the other acute elevation of pressure in the right ventricle to 270 mm. Hg during attacks of coughing, with a history of

syncopal attacks occurring after severe bouts of coughing, usually following meals.

G. F. Walker

The Cough Syndrome. Faintness and Loss of Consciousness from Coughing: the so-called Syndrome of Laryngeal Vertigo. CHARLES BAKER. *Guy's Hops. Rep.*, 98, 132-167.

Nine patients who suffered attacks of loss of consciousness and faintness from coughing are reported. They were collected without difficulty within two years, so the condition is not rare.

One hundred and sixty-eight reported cases are here analysed, with the 9 new cases. The whole group comprises a clear-cut clinical picture.

It occurs predominantly in men, and in the second half of life, especially in plethoric, obese, emphysematous men with a chronic cough. Good living, hard living, excessive smoking and drinking are commonly found. Cough is the provoking factor.

The prognosis is good and wider recognition of this syndrome will prevent invalidism and unnecessary restriction which might result from a mis-diagnosis of epilepsy or cardiovascular disease.

It is suggested that the attacks are due to prolonged increased intrathoracic pressure due to violent coughing against a closed glottis; there is a diminished venous return to the right heart which is mirrored in the venous engorgement in the neck.

As this syndrome is neither laryngeal in origin nor vertiginous in its effect, the term *Laryngeal Vertigo* used by Charcot in his description in 1876 should be abandoned. A simple title is needed which may help this not uncommon syndrome to be better known. To include both faintness from coughing and unconsciousness from coughing, the non-committal title of The Cough Syndrome is suggested.

Maurice Campbell

Hypothyroidism Produced by Radioactive Iodine (I^{131}) in the Treatment of Euthyroid Patients with Angina Pectoris and Congestive Heart Failure. H. L. BLUMGART, A. S. FREEDBERG, and G. S. KURLAND. *Circulation*, 1, 1105-1141, May, 1950.

The therapeutic results are reported on the induction of hypothyroidism by the administration of radioactive iodine (I^{131}) in 18 patients with intractable angina pectoris or advanced congestive heart failure. After the production of hypothyroidism the patients were observed for periods ranging between 7 and 24 months.

The patients were given carrier-free I^{131} orally in single or divided doses to a total of 25.5 to 150 mc., the average dose being 54.4 mc., of which the average retention was 17.9 mc. Mild thyroiditis sometimes followed its administration but otherwise there were no toxic effects. The therapeutic effects appeared 5 weeks to 5 months later and the hypothyroidism produced was persistent. In general the patients were ambulatory during treatment, only those who were seriously incapacitated and had not been helped by standard measures being treated. The symptoms were strikingly lessened or abolished in 8 of the 13 patients with intractable cardiac pain; in the

other 5 the angina was relieved when the patient became myxoedematous, but recurred when thyroid was given to relieve the discomfort of the myxoedema. Of the 5 patients with congestive heart failure only 3 were improved.

H. E. Holling

Myocardial Infarction. Observations on One Hundred Patients who Survived up to Six Years. G. Y. MILLS, A. J. SIMON, F. CISNEROS, and L. N. KATZ. *Arch. intern. Med.*, **84**, 632-639, Oct., 1949.

This is a follow-up study of 100 patients in the Michael Reese Hospital, Chicago, who survived for from 1 to 6 years after acute myocardial infarction. The majority were working at their former jobs.

The electrocardiograms showed little restitution towards normal in 77, partial restitution in 14, and complete change to normality in 9. The incidences of hypertension and of angina pectoris were similar in the three groups and bore no relation to the behaviour of the cardiogram, but heart failure was practically confined to those whose cardiograms showed little restitution. A conspicuous Q wave was present both in the cases showing persistent gross changes and in the cases of partial restitution, but there was no abnormal Q wave when restitution was complete.

Paul Wood

Direct Electrocardiograms from the Human Heart in Situ. Comparison of Direct Leads with Precordial Leads. G. E. HEIN and J. C. REAVIS. *Circulation*, **1**, 964-969, April, 1950.

Direct electrocardiographic records from the surfaces of the human heart were compared with tracings from precordial leads in corresponding positions taken before the heart had been exposed. A close relationship between the direct and the precordial tracings was demonstrated in a case of constrictive tuberculous pericarditis. The direct records were taken after pericardectomy and partial stripping of the epicardium had been carried out.

A. I. Suchett-Kaye

The Use of Anticoagulants in Acute Coronary Insufficiency or Impending Myocardial Infarction. E. S. NICHOL. *Sth. med. J.*, **43**, 565-574, July, 1950.

The author believes that impending myocardial infarction may be recognized clinically by acute exacerbations, or acute development, of the syndrome of angina pectoris. Over a 3-year period 41 patients presumed to be showing the premonitory signs of infarction have been treated by the author with anticoagulants. The previous history and subsequent course of the condition made it highly probable that the diagnosis was correct. Some showed inversion or flattening of T waves in the electrocardiogram taken in the acute phase; normal appearances returning as the attack passed off, and S-T depression was also common. After initial administration of heparin, clotting was controlled by dicoumarol in most cases, though in some heparin was given throughout, the period of treatment ranging from 2 to 82 weeks. A fair degree of relief of anginal pain was obtained in all but 3 patients; 2 of the 41 patients developed transmural

myocardial infarction after anticoagulant therapy had been started; 24 developed clinical manifestations of some endocardial necrosis; and 4 died with acute myocardial infarction 7 days to 10 months after stopping anticoagulant treatment.

The author admits the difficulty of differentiating with certainty between attacks of so-called "coronary failure" and frank myocardial infarction. He emphasizes the frequent benefit that seems to follow anticoagulant therapy.

J. McMichael

The Electrocardiogram in Old Age. P. HAGEN and Z. FREEMAN. *Med. J. Aust.*, **1**, 499-503, April 15, 1950.

With unipolar leads, an electrocardiographic study was made of 56 "clinically healthy" old men, aged 65 to 93 years (average 68 years). All were ambulant. The systolic blood pressure ranged from 190 to 100 mm. Hg, and the diastolic from 90 to 50 mm. Hg. The following abnormalities were detected: in 4 cases, right bundle-branch block; in one case, right ventricular hypertrophy; in 2 cases, first-degree heart block; in 2 cases, S-T depression in the præcordial leads; in 6 cases, flat or inverted T waves in the præcordial leads. Attention is drawn to the fact that, according to this investigation, "T wave changes are not a necessary accompaniment of aging, and most healthy old men have perfect electrocardiographic records."

William A. R. Thompson

Electrocardiograms of Normal Children. With Special Reference to the aV Leads and Chest Leads. J. L. SWITZER and M. BESOAIN. *Amer. J. Dis. Child.*, **79**, 449-466, March, 1950.

Electrocardiograms were obtained from 52 normal children in an institution; they were of both sexes and under 15 years in age. In addition to the standard limb leads, the aV limb leads and 9 precordial leads were used. Tables are given summarizing the rhythm and rate of the heart, and the contour, height, and duration of the deflection in each of the 15 leads. These data are to be used as a base-line for studying abnormalities in children.

The findings agree with those of previous workers. The most interesting findings in the ventricular complex were in the T waves in the precordial leads which could be negative, diphasic, notched, or bifid. A Q wave frequently appeared, particularly in the youngest children.

H. M. Sinclair

Electrocardiographic Patterns in Hypopotassemia: Observations on 79 Patients. S. BELLET, W. A. STEIGER, C. S. NADLER, and P. C. GAZES. *Amer. J. med. Sci.*, **219**, 542-558, May, 1950.

Serial electrocardiograms were recorded in 79 cases of hypopotassemia, in 69 of which the condition was due either to diabetic acidosis (35 cases) or to vomiting secondary to intestinal obstruction (34 cases). Five electrocardiographic patterns pathognomonic of hypopotassemia are described: (1) depression of the ST segment; (2) inversion of the T wave; (3) normal amplitude of T wave with prolongation of Q-T interval; (4) low ampli-

tude of T; (5) persistence of U wave. Patterns 1 and 2 were the most common, occurring in 80% of cases. Pattern 1 was found most commonly in vomiting, pattern 2 in diabetic acidosis. The U wave is considered to furnish important evidence of hypopotassemia, having been present in 31 cases. The cardiographic changes of hypopotassemia were immediately reversible by administration of potassium.

William A. R. Thompson

Pulmonary Hypertension in Chronic Pulmonary Emphysema. C. W. BORDEN, R. H. WILSON, R. V. EBERT, and H. S. WELLS. *Amer. J. Med.*, 8, 701-709, June, 1950.

Direct measurement of the pulmonary arterial pressure was carried out by means of catheterization in 24 men with chronic pulmonary emphysema, who were moderately or completely disabled by effort dyspnoea. The average age of the group was 55, the range being 33 to 70 years. Pressure was measured by means of a Hamilton manometer and optically recorded. The degree of emphysema was estimated by measuring the total lung volume, vital capacity, and functional residual air.

The mean pulmonary diastolic pressure was 22 ± 7 mm. Hg, and the range 15 to 37 mm. This was distinctly higher than in a group of 12 control subjects, in which the values were 8.8 and 6 to 11 mm. Hg respectively. There was no demonstrable correlation between the degree of pulmonary hypertension and the severity of the emphysema, but the average pulmonary arterial pressure was higher in 8 patients who had shown signs of right heart failure than in the others. On the basis of a normal arterio-venous oxygen difference and a normal oxygen consumption the authors concluded that the cardiac output was not raised in these cases. Again, they were unable to find any correlation between the degree of oxygen unsaturation and the arterio-venous oxygen difference.

Paul Wood

Observations on the Management of Hypertension by the Kempner Rice Diet. C. R. WILLIAMSON. *New Engl. J. Med.*, 243, 177-182, Aug. 3, 1950.

This article described in detail some interesting observations on 67 patients receiving the Kempner rice diet for hypertension. Only those subjects were chosen in whom the diastolic pressure was above 100 mm. Hg in repeated determinations. After a preliminary period of observation of 3 weeks without diet, and despite the fact that they were not confined to bed, 37 of the 67 were eliminated from the study as their diastolic pressure had fallen below 100 mm. Hg. The diet contained 200 g. (dry weight) of rice, with fruit, sugar, and fruit juices in sufficient quantities to provide 2,500 calories and 1,000 ml. of fluid. Iron and vitamin supplements were also given.

After 19 more patients had been eliminated either owing to complications such as heart failure or because they could not stick to the diet, the remaining 11 were observed over 6 or more weeks. In all of these cases there was loss of weight and symptomatic improvement, but in 7 of the 11 cases no fall in diastolic pressure was

observed. In the 4 cases in which a fall in diastolic pressure did occur, the addition of salt-free protein to the diet produced no change in blood pressure. Capsules were given to these 4 patients which on some occasions contained lactose, on other salt. In 3 cases the addition of 8 to 10 g. of salt to the diet daily produced a rise in the diastolic pressure, in 2 a rise in the systolic pressure, and in one no change in either. Withdrawal of the salt caused a return to the previous low level. Case histories are given. The author points out the importance of the psychological and malnutritional aspects of the diet in contributing to its success.

G. S. Crockett

Thiocyanate in Hypertension. Blood Pressure Behavior After Withdrawal of the Drug, and Serial Electrocardiograms as Criteria of Response. E. J. FISCHMANN and A. FISCHMAN. *Amer. Heart J.*, 39, 477-483, April, 1950.

A prolonged follow-up study of 50 thiocyanate-treated hypertensive patients, with a control group of 36 untreated patients, revealed that withdrawal of the drug is not always followed by a rise in blood pressure or a return of symptoms. This suggests that to attribute the improvement to thiocyanate may not be entirely justified; the falls in blood pressure may equally be related to the effects of rest and familiarity with blood pressure measurements. In only 11 cases of the present series could a causal connexion be found between thiocyanate therapy and symptomatic improvement. In none of the treated cases was there the reversal of electrocardiographic changes which is known to occur in hypertensive patients after sympathectomy. Moreover, in the control series not treated by this drug a spontaneous fall in blood pressure took place in one-third of patients observed over several months. The authors are unable to confirm the previously accepted suggestion that thiocyanate is a natural depressor.

J. L. Lovibond

Prognosis of Vascular Hypertension. A Nine Year Follow-up Study of Four Hundred and Eighteen Cases. R. FRANT and J. GROEN. *Arch. intern. Med.*, 85, 727-750, May, 1950.

Results are given of a follow-up examination of 418 patients with hypertension who were re-examined after a period of 8 to 9 years. The death rate for men with essential hypertension exceeded the normally expected death rate in the same age groups by 102%; for the women this figure was 91%. Chronic nephritis increased the death rate in men by 587% and in women by 150% in excess of the normal. Hypertension related to toxæmia of pregnancy carried a mortality of 155% in excess of the expected. The total excess mortality for patients with hypertension of all types was 233% for the men and 201% for the women.

Analysis of the cases of essential hypertension showed that the mortality increased with increase of both systolic and diastolic blood pressure. A similar, even more constant, parallelism was found in the ophthalmoscopic picture. The findings of Keith, Wagener, and Barker for the prognostic significance of the retinal changes

could be confirmed. The condition of the fundus of the eye is a better guide for the prognosis of hypertension than the increase in blood pressure. Complications such as heart disease, albuminuria, diabetes and obesity had a definite influence on the prognosis. Hypertension accompanied with obesity appeared to be prognostically more favourable than the same hypertension in patients whose weight was normal or low. Hypertension in young subjects carries a relatively shorter life expectancy than high blood pressure in old age.

The progress of the disease in the patients who were still alive at the time of the re-examination will form the subject of a separate paper.—(Authors' summary.)

Action of a Mercurial Diuretic on the Blood Pressure in the Right Heart in Cardiac Disease. L. SCÉBAT, P. MAURICE, and J. LENÈGRE. *Arch. Mal. Coeur*, **42**, 1149–1153, Dec., 1949.

Action of Morphine on the Blood Pressure in the Right Heart in Cardiac Disease. L. SCÉBAT and J. LENÈGRE. *Arch. Mal. Coeur*, **42**, 1154–1156, Dec., 1949.

Brief accounts are given of the effects of a mercurial diuretic ("novurit") and of morphine on right heart pressures in cases of various types of heart disease with different degrees of cardiac failure. Right auricular or ventricular pressures were measured by cardiac catheterization and the drugs were injected slowly through the catheter.

The injection of the mercurial diuretic was followed by a fall in right auricular and ventricular pressure, variable in time of onset, in degree, and in duration. The authors remark that of all the drugs investigated (including digitaline, theophylline, and morphine) the mercurial diuretic provoked the greatest and most lasting falls in right heart pressure. The injection of morphine usually provoked a smaller and more transient fall, but in some cases caused a rise in both auricular and ventricular pressures. *R. T. Grant*

A Systolic Murmur Heard over the Lower Abdominal Aorta: its Significance in Peripheral Vascular Diseases. R. J. POPKIN. *Angiology*, **1**, 244–246, June, 1950.

The author points out that a systolic bruit over the abdominal aorta has often been noted by previous authors, but finds few, if any, references to its clinical significance.

The bruit is best heard with the patient lying on his back, and the best site to listen is a few centimetres below and to the left of the umbilicus. The systolic bruit is variable in degree and duration, is not affected by posture, and is rarely accompanied by a thrill.

Out of a consecutive series of 35 patients with subjective and objective signs of peripheral vascular disease (20 had arteriosclerosis), a bruit was heard in 22 cases. In a control series of 35 patients without organic peripheral vascular disease, no murmur was heard over the abdominal aorta. The author maintains that, aneurysms and coarctation of the aorta excluded, such a bruit is pathognomonic of organic peripheral vascular disease. The abdominal aorta is the most frequent site of

atherosclerosis and this change is found in some degree in the majority of people above 40. Radiological evidence of calcifications of the abdominal aorta was present in "practically all cases" of arteriosclerosis in which the bruit was heard (no figures are given). The author discusses the possible mechanical factors responsible for the bruit. *M. H. Pappworth*

Truncus Aorticus. Clinical and Radiological Diagnosis.

P. SOULIÉ, J. NOUAILLE, O. SCHWEISGUTH, and M. TOUCHE. *Bull. Soc. méd. Hôp. Paris*, **66**, 919–944, June 2, 1950.

The differentiation of the condition of "truncus aorticus" (atresia of the pulmonary artery with pulmonary blood supply through the bronchial arteries) from Fallot's tetralogy has become a matter of practical importance if unnecessary surgical exploration is to be prevented. The authors report 6 cases and stress the following diagnostic points: constant subclavicular murmur (not present in all cases); extreme aortic configuration of the heart shadow on radioscopy, with prominent aortic knuckle; absence of hilar shadows. On performing angiocardio-graphy they found rapid filling of a large aorta, absence of the pulmonary artery, and delayed entry of the contrast medium into the pulmonary circulation.

G. Schoenewald

Peripheral Arterial Embolism. A Study of 330 Unselected Cases of Embolism of the Extremities. H. HAIMOVICI. *Angiology*, **1**, 20–45, Feb., 1950.

The author presents a critical evaluation of the results of embolectomy and various medical procedures in relation to the natural course of peripheral arterial embolism. He found that the heart was the source of the embolism in 96% of cases. An initial diagnosis of acute arterial thrombosis is often revised when the clinical course or necropsy reveals a "silent" myocardial infarction with mural thrombi. Survival of the limb after embolic occlusion depends on the site and extent of the block; embolism at arterial bifurcations is particularly dangerous. Sudden distension of an artery by an embolus sets up a chain of events that includes vasospasms, secondary thrombosis, and structural changes in the arterial wall.

In a series of 330 cases clinical onset was characterized by sudden pain in 59% of patients and by sudden appearance of paræsthesæ in 22%; onset was progressive in 12%, and in 6% the occlusion was "silent." Embolism was followed by complete recovery in 30%, by chronic post-embolic ischæmia in 17%, by gangrene in 28%, and by early death in 11%. Concurrent venous thrombosis was present in at least 7% of the cases.

Among medical measures, induction of vasodilatation either by drugs such as papaverine or by sympathetic nerve block and anticoagulant therapy is the most valuable. Should these measures fail to restore collateral circulation within 2 to 4 hours, embolectomy should be performed without further delay. Local application of heat and elevation of the limb are harmful, and results in this series suggest that refrigeration in the early stage of the disease is also contraindicated. *T. Semple*

Electrocardiography Fundamentals and Clinical Applications. LOUIS WOLFF, M.D., Visiting Physician, Consultant in Cardiology and Chief of the Electrocardiographic Laboratory, Beth Israel Hospital. Philadelphia and London: W. B. Saunders Co., Ltd., 1950. Pp. 186; Figs. 110. 22s. 6d.

Experience in teaching medical students made it clear that the explanation of basic principles was a more acceptable introduction to a difficult subject than an attempt to teach a list of diverse electrocardiographic patterns. The purpose of this book, then, is a purely practical one; to teach the reader by the essence of these lectures the physiological background of electrocardiography and its applied clinical interpretation. The author begins by describing the electrical phenomena of muscle contraction applicable to the interpretation of the electrocardiogram and proceeds to the concept of unipolar leads and the methods and reasons for exploring the different parts of the body. The second portion of the book tells how these principles apply to analysis of tracings commonly observed in practice. It is a clear, simple and understandable exposition of a subject which

only too easily becomes complicated or incomprehensible.

J. L. Lovibond

Physiology in Diseases of the Heart and Lungs. M. D. ALTSCHULE, Assistant Professor of Medicine, Harvard Medical School; Visiting Physician and Research Assistant, Beth Israel Hospital. Harvard University Press (London: Geoffrey Cumberlege), 1949. Pp. 368. 40s.

The book is based on lectures given by the author to Harvard medical students. It is designed primarily as a review of data included in scientific papers and not of the conclusions derived from them, since these can mislead. A great deal of ground is systematically covered, providing a basis for consideration of the various disorders of cardiac and pulmonary function; specific symptoms and therapeutic mechanisms are discussed and explained. By giving in this way a complete and stimulating review, very fully annotated by references, the author has provided a useful work which will be of value not only to medical students but to investigators and teachers in this field.

J. L. Lovibond